Marshall Electronics

Operating Instructions

Contents

Product Overview

The QUAD VIEWER Series is the latest addition to Marshall's line of IMD-equipped monitors. The monitor features a full resolution 1920 x 1200 LCD panel, built-in high quality HD Quad Splitter, four independent HDSDI inputs, one DVI-I input, IMD (In-Monitor Display) capability, Audio Presence indicator, and Time Code. Video and DVI-I both offer full screen mode, while quad-split mode is scaled to fit onscreen in the highest resolution. IMD and Tally are supported via manual mode, along with Image Video, NVISION, MEI (Marshall), and TSL protocols. Other features include Closed-Caption presence display, front panel user-configurable function buttons, RS-422/485 port with pass-through, and field-upgradeable firmware.

Features

- **1920 x 1200 Full Resolution 17" Panel**
  The QV171-HDSDI features an all-digital TFT-MegaPixel active matrix LCD system with 1920x1200 native resolution. The LCD panel features a brightness of 400 cd/m^2 and a 600:1 contrast ratio making it ideal in a variety of environments and lighting conditions.

- **Quad-Viewer**
  Ability to view 4 inputs on the screen at once. Each input source is scaled and positioned in real-time so that all 4 can be seen. DVI-I input can replace input #4 in this mode. There are 3 different Quad-Layouts from which to choose.

- **In-Monitor Display**
  In-Monitor Display allows on-screen text and tally indication, controlled locally or remotely via a variety of industry standard protocols.

- **OSD Features (On Screen Display)**
  Embedded time code and an embedded audio presence indicator can be displayed on the screen in a variety of configurations. Closed Caption presence indication is also provided for 608/708 captions.

- **Advanced Features**
  Color temperature adjustment, aspect ratio settings, blue-only mode, and monochrome mode are a few of the advanced features allowing the QV171-HDSDI to be at home in any broadcast environment. Pixel-to-Pixel mode also allows native display of any incoming image format.

- **User-Definable Function Buttons**
  Two user-definable function buttons allow quick access to numerous settings and features including aspect ratio, monochrome mode, color temperature, and more.

Installation and Initial Setup

■ **Unpacking**

Carefully unpack the QV171-HDSDI monitor and verify that the following items are included:

- QV171-HDSDI Monitor
- V-PS12-5V-1 Power Supply with 2-Pin Twist Lock Connector
- Operating Instructions

Inspect the unit for any physical damage that may have occurred during shipping. Should there be any damage, immediately contact Marshall Electronics at (800) 800-6608. If you are not located within the continental United States, call +1 (310) 333-0606.

■ **Installation**

The QV171-HDSDI can be mounted in any standard EIA 19" equipment rack. The attached rack ears can be angled to provide the user control over the viewing angle. Adequate ventilation is required when installed to prevent possible damage to the monitor's internal components.

A VESA standard 75mm hole pattern also allows custom mounting installations. Alternately, the QV171-HDSDI can be used in a desktop configuration with optional stand (Marshall part number **V-ST15**).
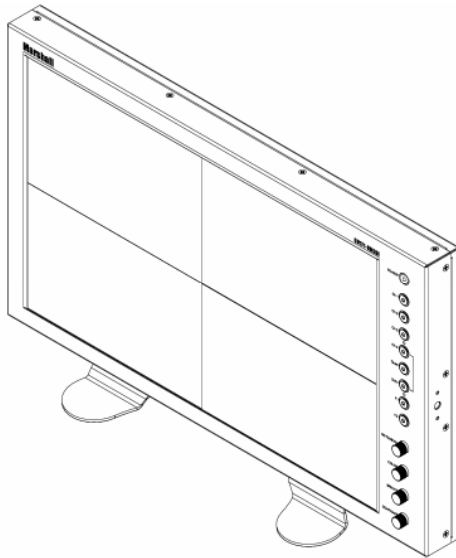
QV171-HDSDI with optional desktop stand
(Marshall Part Number V-ST15)

■ **Connections, Power-On and Initial Setup**

Plug the V-PS12-5V-1 power supply into an AC power source (100-240 V @ 50/60 Hz). Attach the 2-pin twist lock connector to the back of the monitor. Connect the required cables for video signals input and output. (Power must be applied to the QV171-HDSDI for the active loop-though output to be activated.) The monitor defaults to 'ON' when power is supplied.

For IMD setup details, see IMD Configuration Submenu on page 21.

6

Top and Front Panel Features

❶ **Power Button**
Turn the monitor off or on by pressing the power button. In the ON state, the LED on the power button will illuminate green.

❷ **Input Channel Buttons**
Pressing **Ch.1**, **Ch.2**, **Ch.3**, or **Ch.4** will select HDSDI-SDI Video Inputs 1, 2, 3 or 4. This also switches the monitor to *Full Screen Mode*.

❸ **Quad Mode Button**
Allows user to switch monitor to *Quad Mode*. Alternate presses will switch between the three different *Quad Layouts*. **(See Quad Mode – Page 7)**.

❹ **DVI-I Button**
Selects DVI-I input as the video source for Ch.4 (This replaces HDSDI-SDI input #4 when in Quad Mode). When activated, the LED will light.

❺ **User-Definable Function Buttons**
Two user-definable function buttons can be used for direct access to various settings. Functions are assigned using the on-screen menu **(See User-Definable Function Buttons – Page 15)**.

❻ **RotoMenu™ Knob**
The RotoMenu™ knob is alternate means of accessing and navigating the main menu, using only a single control.

❼ **Image Adjustment Knobs**
Use the image adjustment knobs to adjust color saturation, brightness and contrast of the image. The status of each image adjustment parameter is shown on the bottom left of the screen, with values ranging from 0 to 100. Pressing a knob once displays the current value. Pressing a knob twice resets the corresponding adjustment to the default setting. (**See page 16 for instructions to change default settings**).

Rear Panel Features
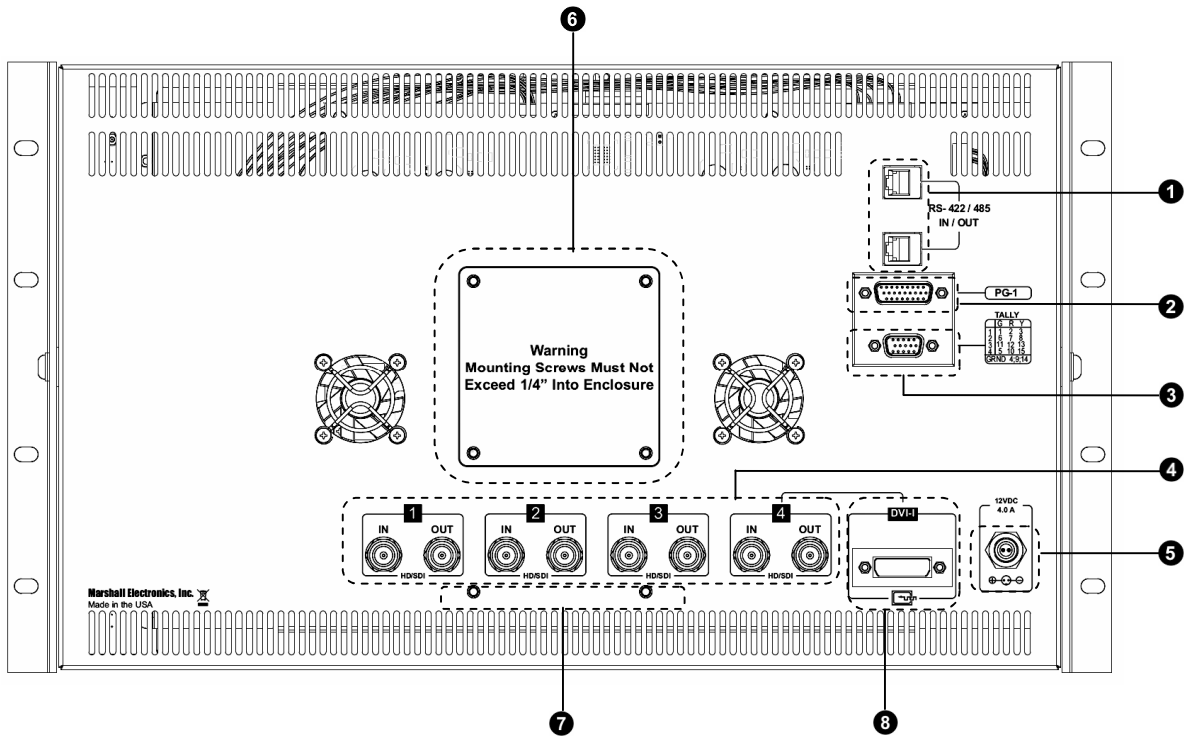
❶ **RS-422/485 Serial Interface**
The RS-422/485 ports are used to remotely control the IMD or all QV171-HDSDI features, using a variety of industry standard protocols. *(Note: Connector/pin-out may need to be adapted depending on protocol and controlling device used. See pin-out details on page 26.)* Only one connection to either port is needed to control the monitor. The second port can be used to loop multiple monitors in the same bus.

❷ **PG-1 Connector**
This is for factory use only. Please do not use.

❸ **Tally Interface (HD-15)**
The OSD tally can be activated via the HD-15 connector by connecting the corresponding pin to ground. A variety of external devices can be used to perform the contact closure. No additional power should be supplied to the HD-15 port. **See pin-out details on page 26.**

❹ **HD-SDI Inputs and Outputs**
The QV171-HDSDI has four HD-SDI inputs and four active loop-through outputs.

❺ **Power Input**
Connect the 12VDC input to the 2-Pin twist lock power input connector. Power can be supplied from the included power supply, or from a variety of DC sources supplying at least 3.0 Amps at 12 Volts.

IMPORTANT: If using a power source other than the included power supply, be sure that the polarity of the DC input is correct:

$\oplus\!-\!\!\left(\cdot\ \cdot\right)\!-\!\ominus$

❻ **VESA 75mm Hole Pattern**
VESA-standard 75 mm hole-pattern is provided to accommodate a variety of custom mounting options.

❼ **Desktop Mounting Holes**
These holes are used when attaching the monitor to the optional desktop stand.
See page 4 for details.

❽ **DVI-I Input Connector**
Integrated DVI Digital and Analog VGA input. Includes EDID and HDCP for connection to Computers, DVD Players, Rasterizers, etc.
See page 7 for details.

Compatible Input Formats

The following SDI standards are supported by the QV171-HDSDI:

    525i, 625i
    1035i/60, 1035i/59.94
    1080i/60, 1080i/59.94, 1080i/50
    1080psF/24, 1080psF/23.98
    1080p/24, 1080p/25, 1080p/29.97, 1080p/30
    720p/60, 720p/59.94, 720p/50

The following VESA standards are supported by the QV171-HDSDI (DVI-I input):

    640x480 @60Hz
    800x600 @60Hz
    1280x1024 @60Hz
    1680x1050 @60Hz
    1600x1200 @60Hz

The following DVI-Video standards are supported by the QV171-HDSDI (DVI input):

    525i, 625i
    480p/59.94
    1080i/60, 1080i/59.94, 1080i/50
    1080p/23.98, 1080p/24
    720p/60, 720p/59.94, 720p/50

Quad Mode and Layouts

The QV171-HDSDI can display 4 different input sources simultaneously. Each source is scaled and positioned to fit the desired layout. There are a total of 3 different layouts illustrated below. Each press of the QUAD Button will change the current layout to next available layout. When in Quad Mode, Ch.4 Video Source can be changed to be the DVI-I source at any time by pressing the DVI-I Button. This will illuminate the DVI-I Button LED. Any SDI Video Source connected to BNC Connector # 4 will not be viewable when the DVI-I LED is lit.

Ch.1	Ch.2
00:00:00:00	00:00:00:00
IMD Text	IMD Text
Ch.3	Ch.4
00:00:00:00	00:00:00:00
IMD Text	IMD Text
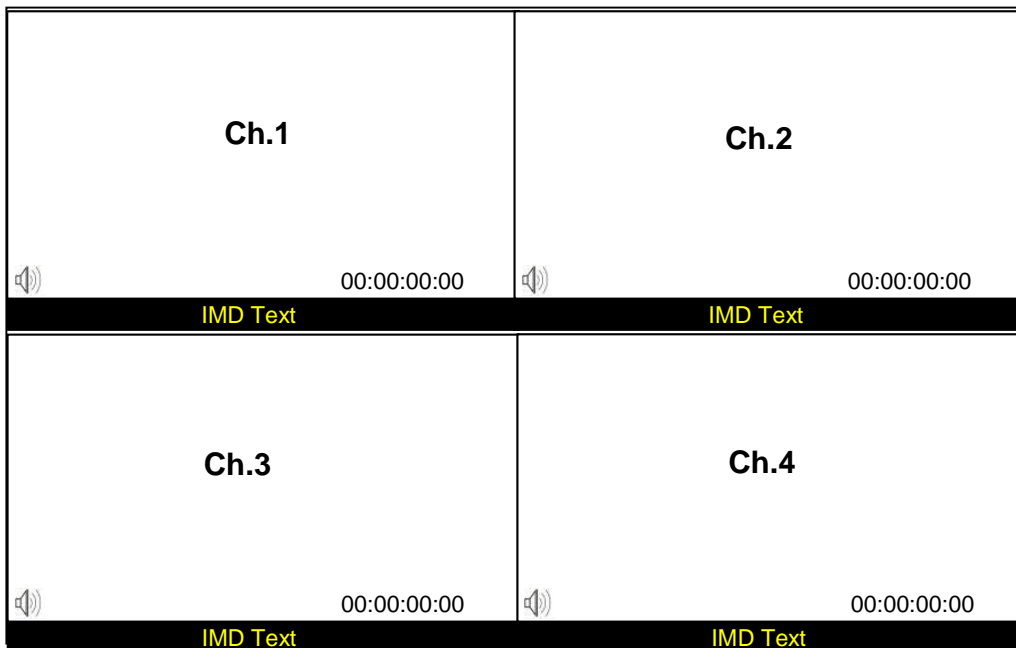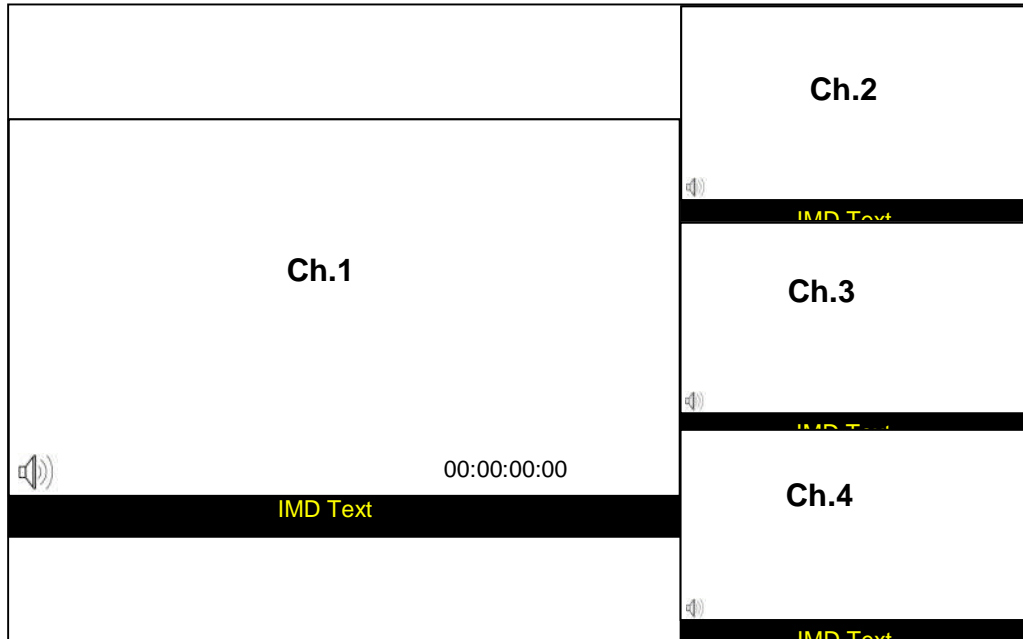
Quad Layout #1

Quad Layout #2

Quad Layout #3

On-Screen Menu

STRUCTURE OVERVIEW

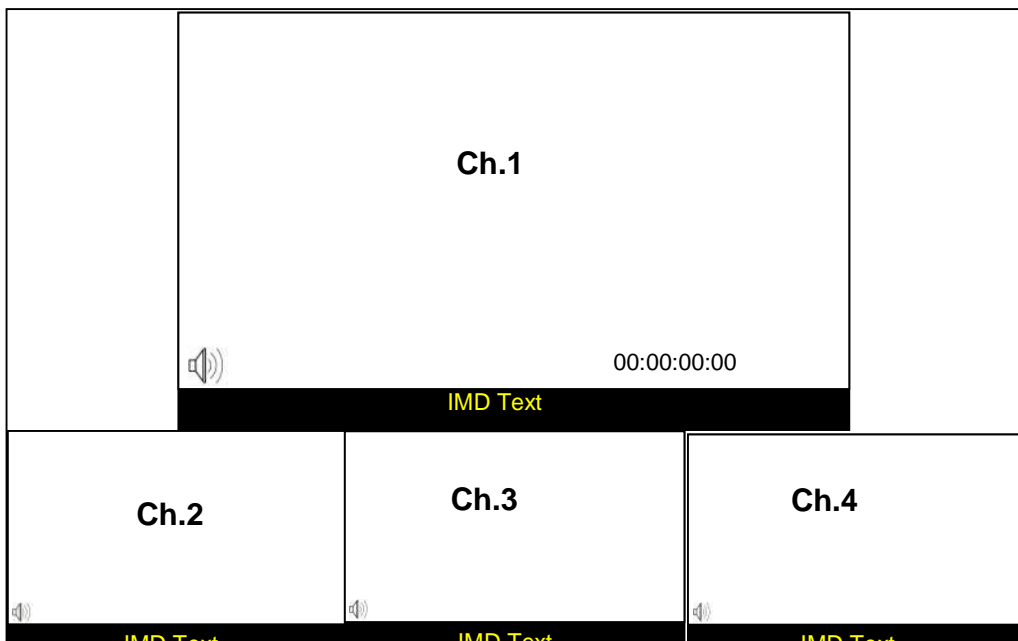| Main				
	Video Config	Back		Return to Main Menu
		Monochrome	Link All	Off, On
		Blue Only	Link All	Off, On
		Pixel to Pixel	Link All	Off, On
		Aspect Ratio	Link All	Full, 4:3, Scaled 4:3, 16:9
		Curtain Color	Link All	Blue, Red, Green, White, Black
		Ctemp/Gamma		55k, 65k, 93k, Linear
		Framelock Preference		Ch1, Ch2, Ch3, Ch4, Freerun
		Analog Phase		0-31 (DVI-Analog input only)
	System Config	Back		Return to Main Menu
		Function 1		Monochrome, IMD State, Anc. Timecode, OSD Tally, Audio Monitor, CC Monitor, Aspect Ratio, Pixel to Pixel, Ctemp/Gamma, Blue Only
		Function 2		Monochrome, IMD State, Anc. Timecode, OSD Tally, Audio Monitor, CC Monitor, Aspect Ratio, Pixel to Pixel, Ctemp/Gamma, Blue Only
		Load Config		Mfg, Back
		Save Config		User 1, User 2, User 3, User 4, User 5, User 6, Back
	OSD Config	Back		Return to Main Menu
		IMD State	Link All	Off, On
		Status Display	Link All	Off, On
		Anc. Timecode	Link All	Off, LTC, VITC
		OSD Tally	Link All	Off, RGY, RG, GR
		Audio Monitor	Link All	Off, On
		CC Monitor	Link All	Off, On
	IMD Config	Back		Return to Main Menu
		IMD ID #		000-255
		IMD Group #		001-254
		IMD Protocol		MEI, Image Video, TSL 4.0, MEI-Image Video
		Tally Source		Standard, TSL/MEI 422, Image Video HW, Image Video 422, Standard + IV 422
		IMD Baud Rate		300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
		IMD Name (S/N) Ch1		User Defined (16 chars max.)
		IMD Name (S/N) Ch2		User Defined (16 chars max.)
		IMD Name (S/N) Ch3		User Defined (16 chars max.)
		IMD Name (S/N) Ch4		User Defined (16 chars max.)
		IMD Tally Mode		T1, T2, T1T2, T2T1, T1-, T2-, T1T2-, T2T1-
	IMD Fixed Config	Back		Return to Main Menu
		IMD Fixed Color	Link All	Green, Yellow, Red
		IMD Fixed Align	Link All	Left, Center, Right
		IMD Fixed String Ch1		User Defined (16 chars max.)
		IMD Fixed String Ch2		User Defined (16 chars max.)
		IMD Fixed String Ch3		User Defined (16 chars max.)
		IMD Fixed String Ch4		User Defined (16 chars max.)
	Service	Version		Displays current firmware version

MAIN MENU AND NAVIGATION

Access and navigate the main menu using the RotoMenu™ knob:

```
▶ Exit                    ◀
  Video Config
  System Config
  OSD Config
  IMD Config
  IMD Fixed Config
  Service
```
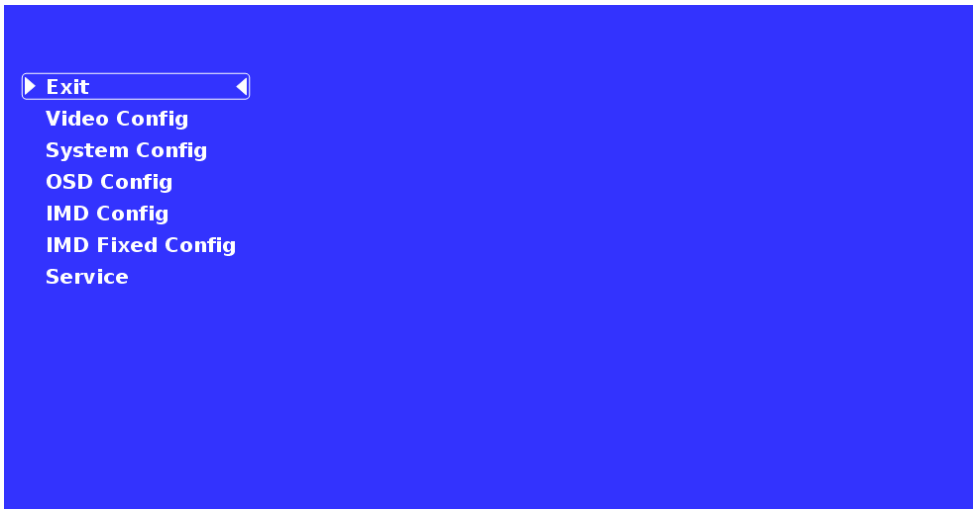
Using the RotoMenu knob
• Press the **RotoMenu™** knob to enter the main menu.
• Rotate the knob to scroll up or down in the main menu or each submenu.
• Press the **RotoMenu™** knob to enter a submenu or choose a setting.
• To return to main menu from submenu, select 'Back' and press the **RotoMenu™.**

The menu automatically times out after 15 seconds of being idle.

VIDEO CONFIGURATION SUBMENU

Use the Video Configuration submenu to select various video settings such as monochrome mode or blue-only mode.

```
  Exit              Back              Ch1  Ch2  Ch3  Ch4
▶ Video Config    ◀▶ Monochrome    ♪ ↻  □    ⊠    □    □    ◀
  System Config      Blue Only            □    ⊠    □    □
  OSD Config         Pixel to Pixel       □    ⊠    □    □
  IMD Config         Aspect Ratio         ◇    ◆    ◆    ◇
  IMD Fixed Config   Curtain Color        □    ⊠    □    □
  Service            Ctemp/Gamma          65K
                     Framelock Mode       Ch1
                     Analog Phase         15
```

Video Configuration Submenu

VIDEO CONFIGURATION SUBMENU (continued)

■ Monochrome Mode

Use this setting to enable monochrome mode. Only the luminance of the image will be displayed as a grayscale picture.

■ Blue-Only Mode

Use this setting to enable Blue-Only mode. This mode displays only the blue color component of the image, switching off the red and green components. Use this mode when calibrating the monitor to SMPTE color bars with the following procedure:

1. Allow the monitor to warm up for at least 5-10 minutes.

2. Display SMPTE split-field color bars on the monitor using an external source.

3. Enable **Monochrome mode**.

4. Locate the pluge pattern (super black, black, and gray bars) at the lower-right corner of the screen. Adjust the **Brightness** knob until there is no visible difference between the super black and black bars, but the gray bar is still visible.

5. Adjust the **Contrast** knob until an even grayscale appears along the top bars.

6. Disable **Monochrome mode**.

7. Enable **Blue-Only mode** and adjust the **Color** knob so that the outermost bars (white and blue) appear to match in brightness.

■ Pixel-to-Pixel Mode

Use this setting to enable Pixel-to-Pixel mode.

This mode bypasses the monitor's internal scaling function and displays images in their native resolution and aspect ratio, with a one-to-one mapping of incoming image pixels to screen pixels:

• For incoming formats smaller than the native resolution of the screen (or selected aspect ratio), the image will be displayed in the center of the screen using only the necessary LCD pixels. For example, 720p images will occupy exactly 1280x720 pixels in the center of the screen. The surrounding screen area will be black.
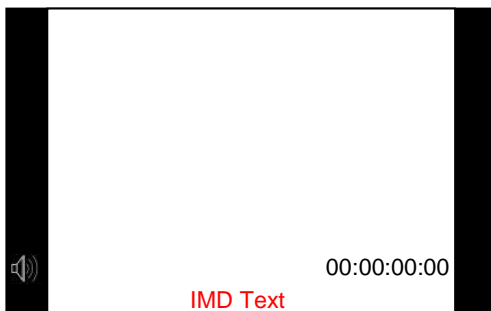
VIDEO CONFIGURATION SUBMENU (continued)

■ Aspect Ratio Settings

Use this menu option to switch between several aspect ratio settings.

As the QV171-HDSDI monitor has a native resolution of 1920x1200 RGB pixels, incoming images are automatically scaled to fit the screen:

- In **4:3** mode, images are scaled up or down to fill the maximum 4:3 portion of the screen (1600 x 1200). IMD text and time code are superimposed on the lower portion of the image. The audio presence indicator and on-screen tally are displayed at the bottom of the screen, outside the image.

- In **Scaled 4:3** mode, images are scaled to a smaller 4:3 portion of the screen, leaving space for IMD text, tally, and audio presence indicator to be displayed below or around the image. Time code is superimposed on the lower portion of the image.

- In **16:9** mode, images are scaled to fill the maximum 16:9 portion at the top of the screen (1920 x 1080). In this mode, IMD text and on-screen tally are displayed below the image. Time code and the audio presence indicator are superimposed on the lower portion of the image.

- In **Full Screen (16:10)** mode, images are scaled to fill the entire 16:10 screen (1920 x 1200). In this mode, all OSD features are superimposed on the image. **Note that when using a 16:9 input image in this mode, the image will be vertically stretched by approximately 10%.**
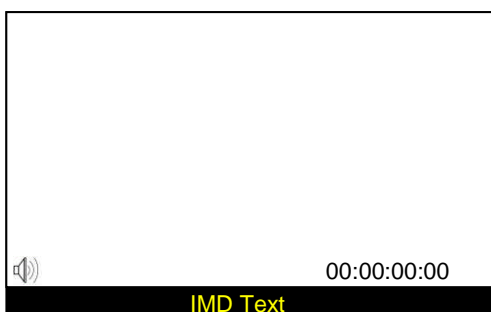
The diagrams on the following page show how IMD text, timecode, and the audio monitor icon are simultaneously displayed on the screen in each aspect ratio setting. The white area represents the video image.
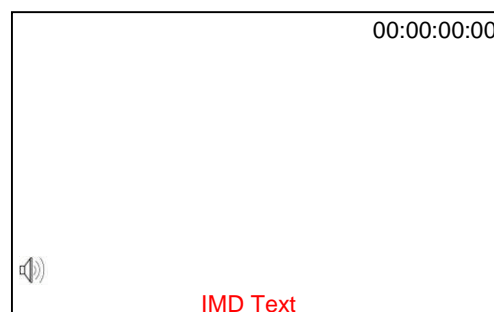
4:3
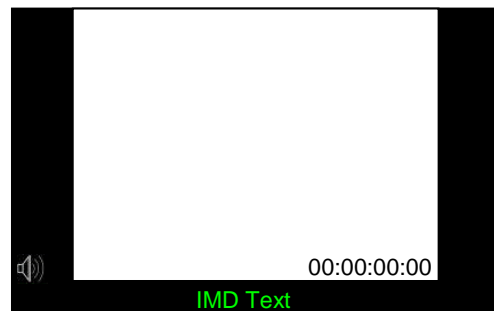
Scaled 4:3

16:9

Full Screen (16:10)

VIDEO CONFIGURATION SUBMENU (continued)

■ Curtain Color

Use this setting to choose the default color displayed on the screen when no video input is present. Available colors are **blue**, **red**, **green**, **white**, and **black**.

■ Ctemp/Gamma

Use this setting to choose one of three color temperature / gamma presets:

- D55 (5500K)
- D65 (6500K)
- D93 (9300K)
- Linear (No gamma applied)

■ Framelock Preference

Used to designate one of the inputs as a reference for synchronizing image scaling when in any Quad Mode. This allows monitor to use a known-stable input source as a reference-lock to the entire system. This can improve performance when 1 or more inputs are frequently switched and are non-synchronous. In some conditions, selecting freerun will reduce the time needed for image lock.
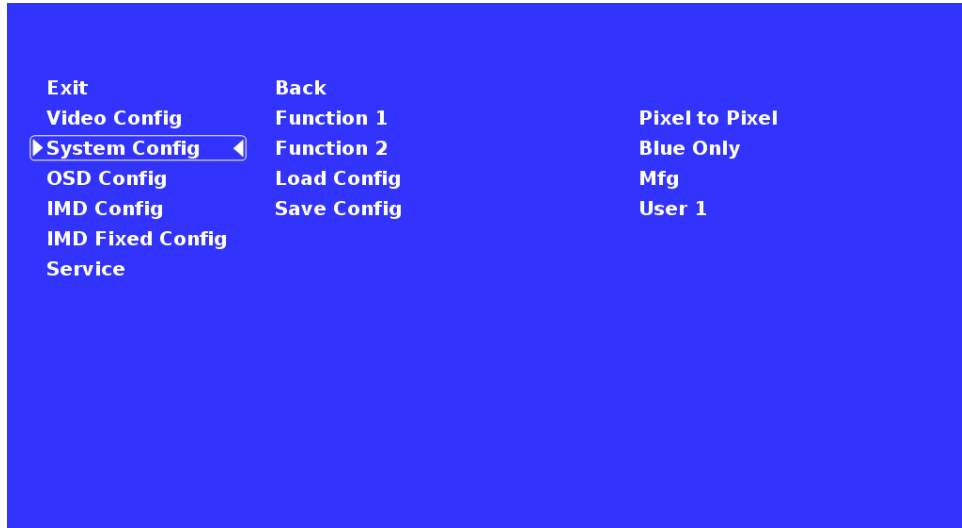
- Ch.1
- Ch.2
- Ch.3
- Ch.4
- Freerun

■ Analog Phase (DVI-Analog or VGA input only)

Adjusts the analog phase value to improve picture quality on DVI-A or VGA Sources. This adjusts the signal phase (not color phase) of the analog-to-digital conversion.

- 0-31 (value)

SYSTEM CONFIGURATION SUBMENU

Use the System Configuration submenu to control various system parameters.

System Configuration Submenu

■ User-Definable Function Buttons

Use the **Function 1** and **Function 2** menu items to define each function button on the front panel of the monitor. The following options are available for each button:

- IMD   Display/hide IMD text
- Time Code   Display/hide time code
- OSD Tally   Rotate amongst types of OSD Tally
- Audio Monitor Display/hide audio presence indicator
- Aspect Ratio   Toggle between 4:3 and 16:9 aspect ratios
- Pixel to Pixel Enable/disable Pixel-to-Pixel mode
- Ctemp/Gamma   Rotate amongst color temperature settings
- Blue Only   Enable/disable Blue Only mode
- Monochrome   Enable/disable Monochrome mode

SYSTEM CONFIGURATION SUBMENU (continued)

■ Saving and Loading User Presets

Use the SAVE CONFIG and LOAD CONFIG menus to save current settings to one of 6 presets, or load a preset. Each Preset saves all monitor settings except for IMD configuration.

- Use the LOAD CONFIG menu to load one of presets USR1 – USR6. Factory default settings can also be loaded by selecting MFG. (Factory defaults cannot be overwritten.)

- Use the SAVE CONFIG menu to save the current settings to a preset from USR1- USR6.

OSD CONFIGURATION SUBMENU

Use the OSD Configuration submenu to select a variety of information to be displayed on the screen.
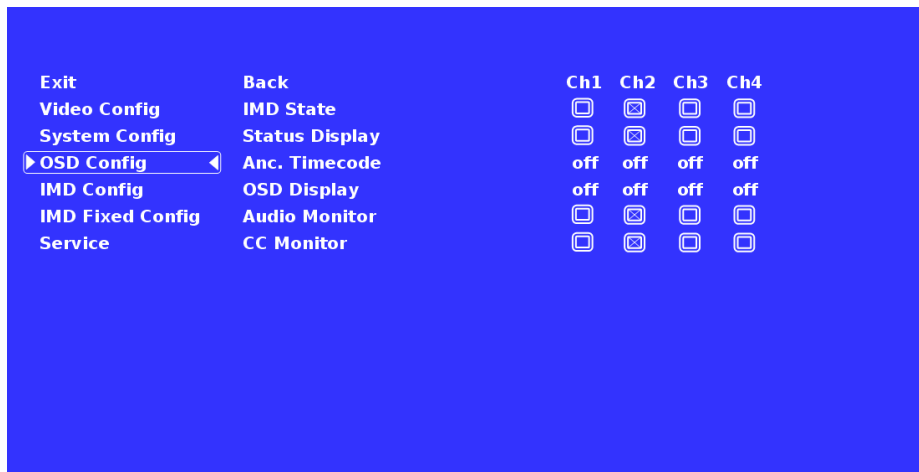
OSD Configuration Submenu

■ IMD State

Use this setting to turn the IMD text display on or off. This setting affects both fixed string IMD text and remote IMD text commands (**see IMD Configuration Submenu for details – page 21**).

OSD CONFIGURATION SUBMENU (continued)

■ **Status Display**

Use this setting to enable or disable status display. When enabled, the current video input standard is displayed on the top left of the screen. When disabled, status is only displayed for 2 seconds when the monitor is powered on, when an input is applied, or when the input video standard changes. The status display reads "No Input" when no video input is present.

CH1 HDSDI/SDI NO INPUT

Status Display

■   **Time Code**

Use this setting to enable time code display on the screen. Time code is de-embedded from the vertical ancillary data (VANC) within the SDI signal. Two types of time code can be selected to display on the screen: **LTC (linear time code)** or **VITC (vertical interval time code)**.

The position of the time code display varies based on the aspect ratio setting and presence of IMD text **(see Aspect Ratio diagrams on page 14).**

Hours   Minutes   Seconds   Frames

00:00:00:00
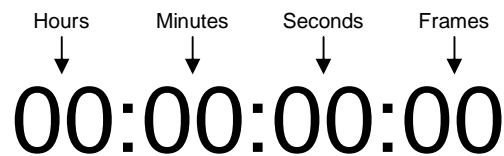
Time Code display

## OSD CONFIGURATION SUBMENU (continued)

■ **OSD Tally**

Use this setting to choose how tally is displayed on the screen. The available OSD Tally options depend on the Tally Source selected in the IMD Configuration submenu (**see page 22**).

When the Tally Source is set to Standard (contact closure), OSD Tally can be set to **Off**, **RGY**, **RG**, or **GR**:

- Off   On-screen tally is disabled
- RGY   Red, yellow, or green tally signals are indicated at both the bottom left and bottom right corners of the screen. Two or three colors are shown simultaneously by subdividing each tally indicator
- RG   Red tally is shown at the bottom left of the screen, and green is shown at the bottom right.
- GR   Green tally is shown at the bottom left of the screen, and red is shown at the bottom right.

The following diagrams show RGY, RG, and GR OSD Tally modes:
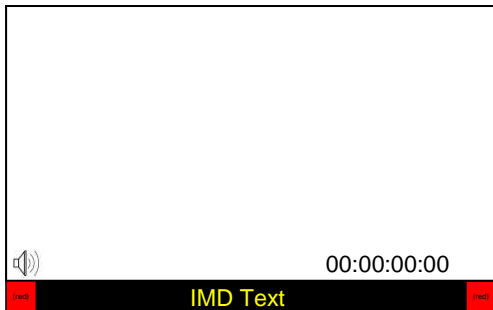
RGY mode: single color activated
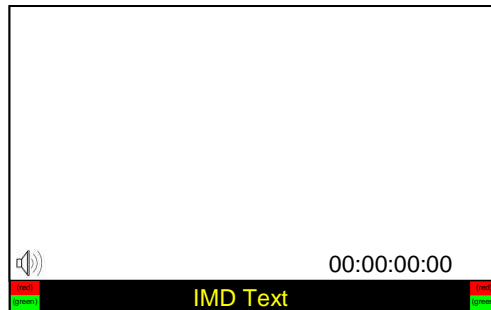
RGY mode: two colors activated
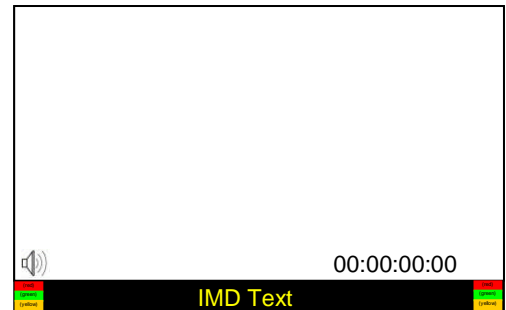
RGY mode: three colors activated
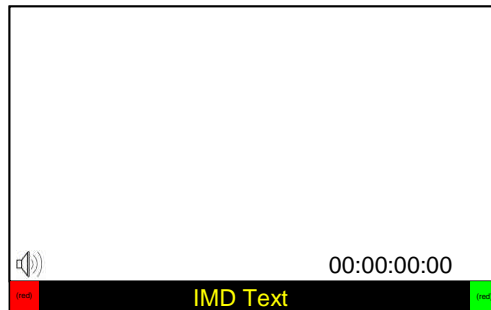
RG Mode: both colors activated
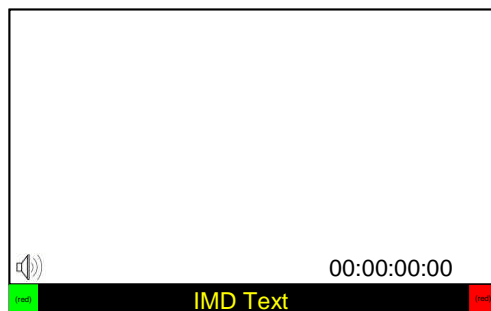
GR Mode: both colors activated

When the Tally Source is set to TSL/MEI 422, OSD Tally can be set to **Off** or **IMD**:

- Off   On-screen tally is disabled
- IMD   Red, yellow, and green tally is displayed according the protocol commands. Green, red, and yellow colors are shown individually on either the bottom left or right of the screen.

OSD CONFIGURATION SUBMENU (continued)

■ **Audio Monitor**

Use the Audio Monitor menu option to enable or disable the audio presence indicator icon. When enabled, this icon indicates whether embedded audio is present in the SDI video input. A red circle and cross will flash on the icon if no embedded audio is present.

Embedded Audio Present   *No Embedded Audio*

■ **CC Monitor (Closed Captioning)**

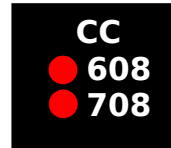Use the CC Monitor menu option to enable or disable the Closed Captioning presence indicator icon. When enabled, this icon indicates the presence of 608 and/or 708 embedded Closed Captioning in the SDI video input. A ***green*** dot indicates the presence of CC Data. A ***red*** dot indicates no captioning data.
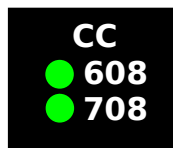
Both 608 and 708 CC Data present   *No CC Data present*

IMD CONFIGURATION SUBMENU

■ **Overview**

The QV171-HDSDI features an In-Monitor Display (IMD) with the ability to display on-screen text and tally in three colors. IMD text, color, and alignment can be assigned to each screen locally using menu options (see below). Alternately, IMD text and tally can be remotely controlled via the RS-422/485 serial interface using several industry-standard protocols, including TSL v4.0 and Image Video. Multiple QV171-HDSDI monitors can be looped together and each addressed individually via the protocol. All menu features of the QV171-HDSDI can also be controlled via the Marshall Network Controller box using MEI protocol. (Contact Marshall Electronics for additional information).

Use the IMD Configuration submenu to configure various IMD parameters as described below.

Exit	Back	Ch1 Ch2 Ch3 Ch4
Video Config	IMD ID #	001 002 003 004
System Config	IMD Group #	001 001 001 001
OSD Config	IMD Protocol	MEI
▶IMD Config ◀	Tally Source	Standard
IMD Fixed Config	IMD Baud Rate	57600
Service	IMD Name (S/N) Ch1	M00000----------
	IMD Name (S/N) Ch2	M00000----------
	IMD Name (S/N) Ch3	M00000----------
	IMD Name (S/N) Ch4	M00000----------
	IMD Tally Mode	T1T2

IMD Configuration Submenu

■ **IMD ID #**

The IMD ID # identifies each screen to the controlling device. When using the TSL protocol, the ID # of each screen should be manually set in conjunction with the controlling device. When using the Image Video protocol, the ID # may be set automatically by the controlling device, after each IMD is initially identified by IMD Name (see "IMD Name[S/N]" below). Available ID #s are **000-254**.

■ **IMD Group #**

Each screen can be assigned an IMD Group # when using the Marshall protocol. Available Group #s are **01-254**.

IMD CONFIGURATION SUBMENU (continued)

■ **IMD Protocol**

Use the IMD Protocol menu option to choose the protocol with which the QV171-HDSDI receives remote commands. Currently, four protocols are available. Contact Marshall Electronics for the latest protocol compatibility.

Image Video
Use the Image Video protocol setting when controlling the IMD from an Image Video tally controller (e.g. TSI-1000) or other controlling device which utilizes the Image Video protocol. The **IMD #**, **IMD Name(S/N)**, and **Baud Rate** parameters must be set for each screen in conjunction with the controlling device.

TSL v4.0
Use the TSL v4.0 protocol setting when controlling the IMD from a TSL tally controller, or other controlling device which utilizes the TSL v4.0 protocol. The **IMD #** must be set for each screen in conjunction with the controlling device.

MEI
Use the MEI protocol setting when controlling the QV171-HDSDI using the Marshall Network Controller box. This protocol allows remote control of all features on the QV171-HDSDI, including marker setup, video configuration, system configuration, and image adjustments (brightness, contrast, etc.). The **IMD #, IMD Group #,** and **Baud Rate** parameters must be set in conjunction with the Network Controller Box.

MEI-Image Video
This protocol setting accepts Image Video commands *via* MEI protocol, for use when an Image Video controller is connected to the Marshall Network Controller box.

■ **Tally Source**

The QV171-HDSDI OSD tally can be controlled in a variety of different ways. Use the Tally Source setting to choose how tally is controlled:

Standard
Use the Standard setting to control tally via contact closure on the HD-15 tally interface.

Image Video HW
Use the Image Video HW setting to control Image Video tally states via contact closure on the HD-15 tally interface. Contact closure of the **Red** pin corresponds to **Image Video Tally 1**, and the **Green** pin maps to **Image Video Tally 2**. Contact closure (ground) corresponds to a LOW state, and open circuit corresponds to a HIGH state. This mode requires the IMD Tally Mode parameter to be set. Consult Image Video documentation for further information.

Image Video 422
Use the Image Video 422 setting to control Image Video tally states via the Image Video serial protocol. OSD tally will be disabled in this mode, as Image Video tally states are manifested in the text color and other parameters. This mode requires the IMD Tally Mode parameter to be set. Consult Image Video documentation for further information.

Standard + IV422
Use the Image Video 422 setting to control Image Video tally states via the Image Video serial protocol, while controlling OSD tally using contact closure on the HD-15 tally interface. This mode requires the IMD Tally Mode parameter to be set. Consult Image Video documentation for further information.

IMD CONFIGURATION SUBMENU (continued)

TSL/MEI 422
Use the TSL/MEI 422 setting to control OSD tally via the TSL or Marshall serial protocols.

■ IMD Baud Rate

Use this setting to choose the baud rate. The baud rate must be set in conjunction with the controlling device. Available baud rates are **300**, **600**, **1200**, **2400**, **4800**, **9600**, **19200**, **38400**, **57600**, **115200**. The TSL v4.0 protocol is fixed at 38400 bauds.

■ IMD Name (S/N)

Use this setting to assign a name to each screen when using the Image Video or Marshall-IV protocols. ***The IMD name is equivalent to the Image Video serial number and is used by the Image Video controlling device to identify each screen.*** The default IMD Name(S/N) is "M00000." It is recommended to maintain this naming scheme in order to avoid serial number conflicts with other Image Video devices on the same serial bus. Each name can be up to 16 ASCII characters.

Press RotoMenu™ knob to edit the IMD Name. Rotate the RotoMenu™ knob to move the cursor. Press the RotoMenu™ knob with the cursor on the character to be changed, then rotate the knob to scroll through the character set . Press the RotoMenu™ knob to choose a character.

■ IMD Tally Mode

Use this setting when using Image Video tally control. Choose one of the following settings, in conjunction with the Image Video controlling device. **T1, T2, T1T2, T2T1, T1-, T2-, T1T2-, T2T1-**. Consult Image Video documentation for further information.

IMD FIXED SUBMENU

■ **IMD Fixed Color**

Use this setting to choose the color of the IMD Fixed String text (see below). Available colors are **red**, **green**, and **yellow**. This setting does not affect text color when using IMD text via the Image Video or TSL v4.0 protocols (text color is set via the protocols).

■ **IMD Fixed Align**

Use this setting to choose the horizontal alignment of the IMD text. IMD text can be justified on the **left**, **center** or **right** of the screen. This setting is overridden when using IMD text via the Image Video protocol (alignment is set via Image Video protocol).

■ **IMD Fixed String**

Use this setting to display static IMD text on the screen. This setting is used to enter IMD text locally, when a serial protocol is not used for remote control. The IMD Fixed String is saved after power cycle. *The IMD Fixed String will be overridden by serial protocol commands.*

Press RotoMenu™ knob to edit the IMD Fixed String. Rotate the RotoMenu™ knob to move the cursor. Press the RotoMenu™ knob with the cursor on the character to be changed, then rotate the knob to scroll through the character set . Press the RotoMenu™ knob to choose a character.
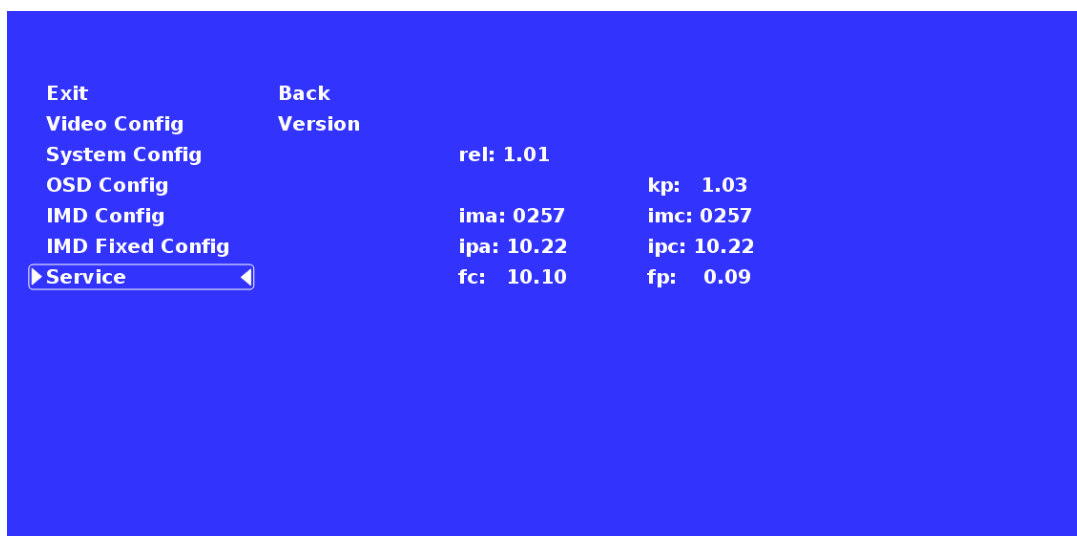

IMD Fixed Configuration Submenu

SERVICE SUBMENU

■ **Software Version Display**

The Main Board, Keypad, and CPLD software version numbers are displayed.

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Exit	Back		
Video Config	Version		
System Config		rel: 1.01	
OSD Config			kp: 1.03
IMD Config		ima: 0257	imc: 0257
IMD Fixed Config		ipa: 10.22	ipc: 10.22
▶ Service ◀		fc: 10.10	fp: 0.09

Service Menu

The following information is displayed:

      • Rel: Release Package version number

      • kp   Keypad version number

      • ima   A/B Input module version

      • imc   C/D Input module version

      • ipa   Input processor firmware

      • ipc   Input processor firmware

      • fc   Combiner FPGA version

      • fp   Packet decoder FPGA version

Specifications

■ **PANEL**

Screen Size	17" Diagonal
Display Area (h x v)	367.20 x 229.50 mm
Aspect Ratio	16:10 Native (4:3/16:9 Modes)
Pixels	1920 x RGB x 1200
Color Depth	18-bit
Viewing Angle (h x v)	140° x 120°
Brightness	400 cd/m^2
Contrast Ratio	600:1
Dot Pitch (h x v)	0.064 x 0.191 mm
Pixel Pitch (h x v)	0.191 x 0.191 mm

■ **VIDEO INPUT/OUTPUT**

HD-SDI Input / Output
Supports ITU-R BT.656, SMPTE 259M, 292M, 274M

DVI-I Video/VESA input

■ **CONNECTORS**

HD-SDI Video Input
4 x BNC Female (75 Ω)

HD-SDI Video Output (Active Loop-Through)
4 x BNC Female (75 Ω)

DVI-I Video/VESA input
1 x DVI-I Female connector

Power Input
2-Pin Twist Lock Connector

Tally Hardware Interface
HD-15 Female

RS-422/485 Interface
2 x RJ12 (Modular 6P6C)

■ **TALLY HARDWARE INTERFACE (HD-15)**

Activation requires contact closure of pin to ground on the HD-15 connector:

Pin No.	Signal
1	Channel 1 Green
2	Channel 1 Red
3	Channel 1 Yellow
4	Ground
5	Channel 4 Green
6	Channel 2 Green
7	Channel 2 Red
8	Channel 2 Yellow
9	Ground
10	Channel 4 Red
11	Channel 3 Green
12	Channel 3 Red
13	Channel 3 Yellow
14	Ground
15	Channel 4 Yellow

■ **RS-422/485 SERIAL INTERFACE (RJ12)**

Protocols: Image Video, TSL v4.0, MEI
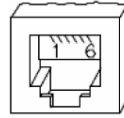
Pin No.	Signal
1	Tx-
2	Ground
3	Rx+ (Receive from host)
4	Rx- (Receive from host)
5	N/C
6	Tx+

■ **ELECTRICAL**

Power Consumption	35 W Max
Voltage Requirement	12 VDC

V-PS12-5V-1 Power Supply:
Input	100V-240V, 2.5A, 50-60Hz
Output	12-17VDC, 5A, 60W Max

■ **MECHANICAL**

Dimensions (w x h x d): 18.9" x 10.45" x 1.40"
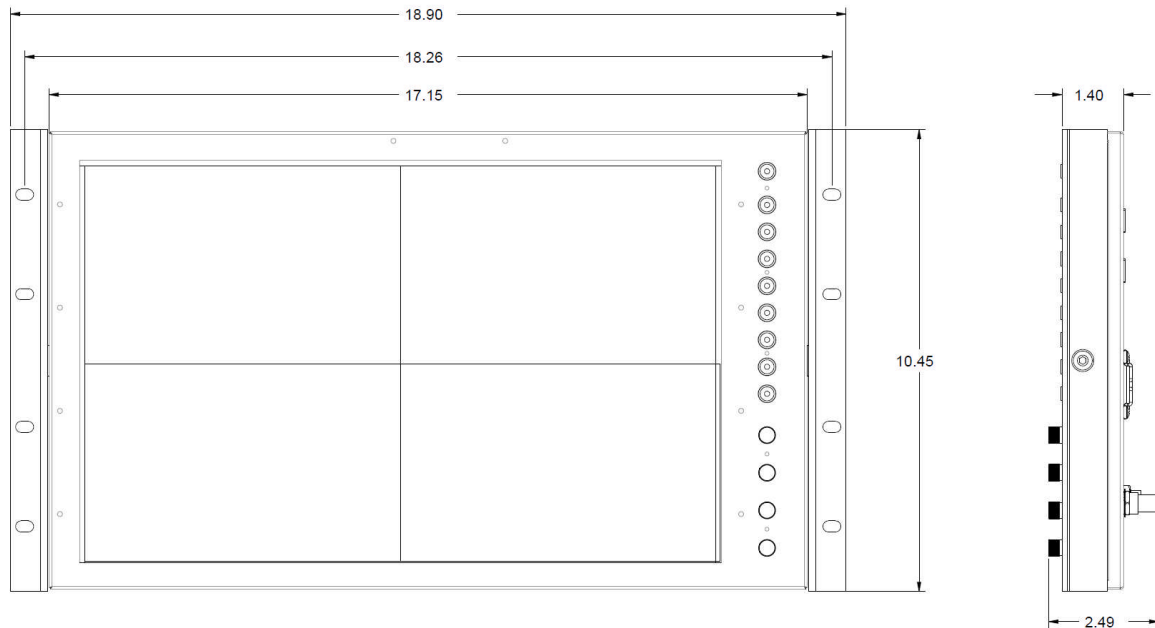
Weight (with rack ears): 6.76 lbs

Operating Temperature	32°F to 120°F (0°C to 50°C)
Storage Temperature	-4°F to120°F (-20°C to 50°C)

Compliance	Œ, FCC-Class A, ANSI-63.4 (Certificates on file)
RoHs	Do not dispose. Return to Manufacturer or Authorized Recycle Facility.

Maintenance

- **Screen Cleaning**

  Periodically clean the screen surface using ammonia-free cleaning wipes (Marshall Part No. **V-HWP-K**). A clean micro-fiber cloth can also be used using only non-abrasive and ammonia-free cleaning agents. Do not use paper towels. Paper towel fibers are coarse and may scratch the surface of the polycarbonate faceplate or leave streaks on the surface. Antistatic and fingerprint resistant cleaning agents are recommended. Do not apply excessive pressure to the screen to avoid damaging the LCD.

- **Faceplate Dusting**

  Dust the unit with a soft, damp cloth or chamois. Dry or abrasive cloths may cause electrostatic charge on the surface, attracting dust particles. Neutralize static electricity effects by using the recommended cleaning and polishing practice.

Warranty

Marshall Electronics warranties to the first consumer that this **QV171-HDSDI** LCD monitor will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of one year from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer. This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty. *It is considered normal for a minimal amount of pixels, not to exceed three, to fail on the periphery of the display active viewing area.* Marshall Electronics reserves the option to refuse service for display pixel failure if deemed unobtrusive to effective use of the monitor by our technicians. No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above. Due to constant effort to improve products and product features, specifications may change without notice.